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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/836,931	04/17/2001	Dean R.E. Long	SUN1P800/P5254	9076

22434 7590 01/18/2006

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EXAMINER

TO, JENNIFER N

ART UNIT PAPER NUMBER

2195

DATE MAILED: 01/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/836,931	LONG ET AL.	
	Examiner	Art Unit	
	Jennifer N. To	2195	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 September 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date: _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-9 are pended for examination.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schmidt (U.S. Patent No. 6523059), and in view of Toutonghi et al. (hereafter Toutonghi) (U.S. Patent No. 5842016).

4. Schmidt and Toutonghi are cited in the previous office action.

5. As per claim 1, Schmidt teaches the invention substantially as claim including a computer-implemented method for requesting a consistent state in a computing environment using a first thread, the computing environment including multiple threads, the multiple threads including the first thread (col. 3, lines 21-27), comprising:

setting the state of the first thread to a safe state (col. 9, lines 20-34);

acquiring a consistent state lock using the first thread (col. 3, lines 21-27; col. 10, lines 19-34);

identifying substantially all threads that are inconsistent, the inconsistent threads being included in the multiple threads (fig. 7A; col. 10, lines 19-45; col. 11, lines 6-15; col. 13, lines 17-29);

altering the state of the substantially all threads that are inconsistent to a consistent state (fig. 7B; col. 10, lines 19-45; col. 11, lines 35-53; col. 13, lines 30-32);

notifying the first thread when the state of the substantially all threads that are to inconsistent have been altered to be consistent (fig. 6; col. 10, lines 19-64; col. 13, lines 30-37);

releasing the consistent state lock using the first thread (col. 10, lines 19-47; col. 13, lines 30-39).

Schmidt did not specifically teach saving a snapshot of an indication of a state of the first thread, wherein the indication of the state of which the snapshot is saved is an indication of whether or not the first thread was consistent, and restoring the indication of the state of the first thread from the snapshot.

6. However, Toutonghi teaches saving a snapshot of an indication of a state of the first thread, wherein the indication of the state of which the snapshot is saved is an indication of whether or not the first thread was consistent, and restoring the indication of the state of the first thread from the snapshot (figs. 23, 27; col. Col. 12, lines 61-67; col. 13, lines 1-12; col. 15, lines 8-67; col. 16, lines 1-17).

7. It would have been obvious to one of an ordinary skill in the art at the time the invention was made to have combined the teaching of Schmidt and Toutonghi because Toutonghi teaching of saving a snapshot of an indication of a state of the first thread, wherein the indication of the state of which the snapshot is saved is an indication of whether or not the first thread was consistent, and restoring the indication of the state of the first thread from the snapshot would improve the integrity of Schmidt's system by directing to an efficient approach to synchronizing garbage collection with the execution of other threads, and minimizing the negative impact of garbage collection on overall system performance (Toutonghi, col. 2, lines 33-43).

8. AS per claim 2, Schmidt further teaches the step of performing a garbage collection after releasing the consistent state lock using the first thread (col. 16, lines 28-53).

9. As per claim 3, Schmidt further teaches the step of notifying the substantially all threads that have been altered to be consistent that the garbage collection had been performed (col. 8, lines 1-23; col. 13, lines 30-34).

10. As per claims 4-9, they are rejected for the same reason as claims 1-3 above.

Response to Arguments

11. Applicant's arguments with respect to claims 1, 4, and 7 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Bush et al. (U.S. Patent No. 6308319) teaches thread suspension system.

Scalzi et al. (U.S. Patent No. 5895494) teaches method of executing perform locked operation instructions for supporting recovery of data consistency.

Tarafadar et al. (U.S. Patent No. 6772367) teaches a method for fault tolerance in concurrently executing computer programs.

Gee et al. (U.S. Patent No. 6371286) teaches real time processor capable of concurrently running multiple independent JVM.

Kiihn (U.S. Patent No. 6848109) teaches coordination system.

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer N. To whose telephone number is (571) 272-7212. The examiner can normally be reached on M-T 6AM- 3:30 PM, F 6AM- 2:30 PM.

15. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on (571) 272-3756. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

16. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


MENG-AI AN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2105